

WHAT IS CLAIMED IS:

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A1*
1. An image pickup apparatus comprising:
first and second image pickup portions for
receiving at least a first wavelength component of
object light and a second wavelength component of the
object light different from said first wavelength
component, respectively; and
first and second optical systems for guiding said
first and second wavelength components of the object
light to be received by said first and second image
pickup portions to said first and second image pickup
portions, respectively, via different optical paths,
said first and second optical systems being constructed
such that focal length of said first optical system
with regard to said first wavelength component is equal
to the focal length of said second optical system with
regard to said second wavelength component.
 2. An image pickup apparatus according to claim 1,
wherein said first wavelength component is a
representative wavelength of light of a first spectral
distribution and said second wavelength component is a
representative wavelength of light of a second spectral
distribution which is different from said first
spectral distribution.
 3. An image pickup apparatus according to claim

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2, wherein said first spectral distribution is a spectral distribution including peak wavelength of a luminosity factor.

5 4. An image pickup apparatus according to claim 1, wherein said first wavelength component is included in a spectral distribution including peak wavelength of a luminosity factor.

10 5. An image pickup apparatus according to claim 1, wherein said first and second wavelength components are two different color components among red, green, and blue.

15 6. An image pickup apparatus according to claim 1, wherein each of said first and second optical systems comprises a filter for extracting said first and second wavelength components.

20 7. An image pickup apparatus according to claim 1, wherein each of said first and second optical systems comprises a single lens.

25 8. An image pickup apparatus according to claim 7, wherein said single lenses of said first and second optical systems are integrally formed of a glass material or a resin material.

9. An image pickup apparatus according to claim
8, further comprising:

a light shielding layer provided between said
integrally formed single lenses.

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10. An image pickup apparatus according to claim
1, wherein each of said first and second optical
systems comprises a single lens provided with an
infrared radiation cutting filter.

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11. An image pickup apparatus according to claim
1, wherein each of said first and second optical
systems comprises photochromic glass.

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12. An image pickup apparatus according to claim
1, wherein said first and second optical systems
comprises filters for extracting said first wavelength
component and said second wavelength component,
respectively.

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13. An image pickup apparatus according to claim
1, wherein each of said first and second optical
systems comprises a color purity correction filter.

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14. An image pickup apparatus according to claim
1, wherein each of said first and second optical
systems comprises a filter whose transmission factor

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becomes smaller as the distance from the optical axis thereof becomes longer.

15. An image pickup apparatus according to claim
5, wherein, when a virtual object distance D [m] is
defined as a function of an image pickup angle $\theta[^\circ]$ of
said first or second optical systems to be $D = 1.4 /$
 $\tan(\theta/2)$, an interval between optical axes of said
first and second optical systems is set such that
10 change in an interval between an object image of said
first wavelength component received by said first image
pickup portion and an object image of said second
wavelength component received by said second image
pickup portion between when an object exists at said
15 virtual distance and when the object exists at infinity
is smaller than a pixel pitch of said image pickup
portions multiplied by two.

16. An image pickup apparatus according to claim
20 1, wherein said first and second image pickup portions
are integrally formed.

17. An image pickup apparatus according to claim
1, wherein said first and second image pickup portions
25 are formed in a plane shape.

18. An image pickup apparatus according to claim

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1, further comprising:

a plurality of openings for taking in external
light through said first and second optical systems.